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09/412,403	10/05/1999	JOHN SANTEE	RATLP009	9613

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RITTER, LANG & KAPLAN
12930 SARATOGA AE. SUITE D1
SARATOGA, CA 95070

EXAMINER
BASOM, BLAINE T

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/412,403	Applicant(s) SANTEE ET AL.	
	Examiner Blaine Basom	Art Unit 2173	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 November 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *4,5,7,8,10,24,25,27,28 and 30* is/are allowed.

6)☒ Claim(s) *1-3,6,9,11-23,26,29 and 31-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Response to Arguments

Applicant's arguments with respect to claims 1-3, 6, 9, and 11-21 have been considered but are moot in view of the following new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1 through 3, 6, and 11 through 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over European Patent Application No. 869,433, which is attributed to Anodide et al. (hereinafter referred to as "Anodide"), and U.S. Patent No. 6,097,388, which is attributed to Goodfellow. As described in the first Office Action, Anodide discloses a methodology for constructing a graphical representation, i.e. map, of the graphical user interface of an application. Particularly regarding claim 1, with the method disclosed by Anodide, a user manually opens and closes each window in an application in order to identify new windows (see column 8, lines 6-8). It is interpreted that a window is opened and closed by performing actions on GUI objects within the window, as is common in the art. These new windows are used to create a GUI object forest and opens relation (see column 8, line 49- column 9, line 12), which are then used to create a map of the GUI of the application (see column 9, lines 13-25). Each node of the map represents a

window of the application (see column 11, lines 47-49). Therefore, it is interpreted that the new windows identified by opening and closing each window of the application are added to the map of the GUI of the application. However, Anodide does not teach the idea, which is expressed in claim 1, for identifying a first set of windows that are active on the desktop of a computer; identifying a second set of windows that are active on the desktop of the computer; and comparing the first set of windows to the second set of windows to identify a new window in the second set.

Like the teachings of Anodide, the U.S. Patent of Goodfellow concerns windows presented on a computer. Specifically, Goodfellow presents a method for efficiently updating the computer's display in response to window operations, such as the addition, deletion, or movement of a window. This method involves comparing the "display map" generated after a window operation to the "display map" generated prior to the window operation (see column 4, lines 43-47). Because a display map identifies the windows on the display, the stacking order of the windows, and the location of the windows (see claim 1), a display map is considered equivalent to a set of windows that are active on the desktop of the computer, and the generation of a "display map" is considered equivalent to identifying a set of windows that are active on the desktop of the computer. Thus, like recited in claim 1, Goodfellow teaches identifying a first set of windows that are active on the desktop; identifying a second set of windows that are active on the desktop; and comparing the first set of windows to the second set of window after a window operation, such as a window creation or deletion.

It would have been obvious to one of ordinary skill in the art, having the teachings of Anodide and Goodfellow before him at the time the invention was made, to modify the computer

implementing the method of Anodide such that it uses the method disclosed by Goodfellow to update the display after opening and closing windows. It would have been advantageous to one of ordinary skill to utilize such a combination because the display would be update more quickly and efficiently, as is taught by Goodfellow (see column 13, lines 30-36). Thus when a user opens and closes each window of an application to identify new windows, a second set of windows would be identified, and compared to the first set of windows identified prior to the window operation.

Referring to claim 2, Anodide et al. discloses an "Opens Relation", which is a set of (op, win) pairs; performing the operation, op, causes the window, win, to open. Each operation-window pair of the "Opens Relation" has a many-to-many relationship (see column 9, lines 8-12). Therefore it is deducted that as "Opens Relation" (op, win) pairs are created for the identified windows, it must be determined if each window already exists in the relation. Thus, each window is compared to windows that are already in the "Opens Relation". Since the "Opens Relation" is used to construct the graph of the GUI, this is equivalent to analyzing the graph to determine if the new window is already present in the map.

Referring to claim 3, the many-to-many attribute of the "Opens Relation", as disclosed by Anodide et al., implies that the same window could be opened by more than one operation. As expressed above, the "Opens Relation" is used to construct a graph representative of the GUI of an application, wherein the nodes of this graph represent windows of the GUI and edges of the graph represent operations that open the windows they point to. Therefore, it is interpreted that

two edges could point to a node in the graph, meaning that two operations could open the same window. This is equivalent to adding a shortcut to a window that is already present in the map.

Regarding claim 6, it is shown above that in the method of Anodide et al., each new window is compared to windows that are referenced in the "Opens Relation", which is equivalent to analyzing the graph to determine if the new window is already present in the map. Also as discussed above, the "Opens Relation" is a set of (op, win) pairs, where "win" is a reference to a window. The value for "win" is considered the name of the window to which it refers. Thus, the comparison in the method of Anodide et al. implies a comparison of window names, where the new window is determined to already be present in the "Opens Relation" if the new window and the window in the "Opens Relation" have the same name. And as discussed above, since the "Opens Relation" is used to create the map, this is equivalent to determining that the new window is already present in the map if the new window and a window in the map have the same name.

Referring to claim 11, reference letter B in FIG. 6 of the Anodide et al. application refers to a graph, representing the GUI of an application, on a computer. The graph is of a similar structure and functionality as a map and is therefore considered equivalent.

Referring to claim 12, the map shown in FIG. 6 of Anodide et al. is hierarchical, includes windows, and the edges of the map represent user actions. No user interface objects are shown in the map. However, the method described by Anodide et al. uses a "GUI object forest" to

create the map. The "GUI object forest" is a collection of trees whose roots represent windows of the GUI and whose nodes represent GUI objects in the windows (see column 8, line 53 – column 9, line 5). Therefore it is trivial task to add GUI objects to the map of FIG. 6 by simply replacing each node in the map of FIG. 6 by its corresponding tree in the "GUI object forest."

As per claims 13 and 14, it was described above, in the discussion regarding claim 1, that the method disclosed by Anodide et al. requires that actions be performed on GUI objects in order to identify new windows. It is well known in the art that graphical user interface objects can include buttons, sliders, check boxes, and tab controls. Additionally, it is well known in the art that actions to be performed on user interface objects can include left mouse clicks, right mouse clicks, left mouse double clicks, and keystrokes.

Referring to claims 15, 22, 23, 26, and 31-34 the "computer program product" declared in claim 15 is encompassed by the "computer implemented method" declared in claim 1. Additionally, the abstract of Anodide et al. declares that the system of Anodide et al. utilizes "recorded test sequences and test designs". Recorded test sequences imply a computer readable medium that stores computer codes. Therefore claim 15 is rejected for the same reasons that claim 1 is rejected. By the same reasoning, claims 22, 23, 26, and 31-34 are rejected for the same reasons that claims 2, 3, 6, and 11-14 are respectively rejected.

Claims 9 and 29 are rejected as being unpatentable over the combination of Anodide et al. and Goodfellow, as described above, and also U.S. Patent No. 6,144,962, which is attributed

to Weinberg et al. As described above, the combination of Anodide et al and Goodfellow teaches a method, equivalent to that of claims 1 and 15, for mapping a graphical user interface of an application. However, the combination does not disclose the idea of receiving an input from a user that one more graphical user interface objects should be ignored when generating the map, as is recited in claims 9 and 29.

Like Anodide et al., Weinberg et al. discloses a method for generating a map of an application, or more specifically, Weinberg et al. discloses a method for generating a map of a website. Regarding claims 9 and 29, Weinberg et al. teaches that a user input can be received to apply a "filter" when generating the map (see column 26, lines 48-54). This filter is used to remove nodes and links which are not of interest (see column 26, lines 63-67), which is considered equivalent to ignoring the nodes and links which are not of interest.

It would have been obvious to one of ordinary skill in the art, having the teachings of Anodide et al., Goodfellow, and Weinberg et al. before him at the time the invention was made, to modify the method taught by Anodide et al. and Goodfellow to include the filter idea of Weinberg et al. such as to filter out nodes and links of the map which are not of interest. Filtering out links of the maps created by the method of Anodide et al. is considered equivalent to ignoring graphical user interface objects because the links represent actions performed on graphical user interface objects. It would have been advantageous to one of ordinary skill to utilize such combination because filters allow a user to focus in on particular features of the application's graphical user interface, as is taught by Weinberg et al (see column 26, lines 44-48).

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Anodide et al. and Goodfellow in view of the state of the art. As discussed above, the combination of Anodide et al. and Goodfellow discloses a computer program product for mapping a user interface equivalent to that of claim 15. However, the combination does not acknowledge that the computer readable medium expressed in claim 15 is a CD-ROM, floppy disk, tape, flash memory, system memory, hard drive, or data signal embodied in a carrier wave. Nevertheless it is notoriously well known in the art that a computer readable medium could be a CD-ROM, floppy disk, tape, flash memory, hard drive, or data signal embodied in a carrier wave. The examiner takes OFFICIAL NOTICE of this teaching. Therefore, it would have been obvious to one of ordinary skill in the art, having the teachings of Anodide et al. and Goodfellow before him, to modify the computer program product of Anodide et al. and Goodfellow such that the computer readable medium could be a CD-ROM, floppy disk, tape, flash memory, system memory, hard drive, or data signal embodied in a carrier wave. It would have been advantageous to one of ordinary skill to utilize such combination because CD-ROMs, floppy disks, tapes, flash memories, hard drives, and data signals embodied in carrier waves are all conventional mediums for data storage and experience a lot of use, as made known by the state of the art.

Claims 17 through 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Anodide et al. and Goodfellow described above, and additionally U.S. Patent No. 6,189,116, which is attributed to Mongan et al. As described above in the rejection for claim 1, Anodide et al., as modified by the teachings of Goodfellow, discloses a system to generate a map

of the graphical user interface of an application by programmatically executing the application, and wherein a new window is added to the map by performing an action in the graphical user interface and identifying the new window by comparing windows in the graphical user interface before and after the action. In other words, the application mapper of Anodide et al. and Goodfellow, generates the map by performing a "tour of the interface", meaning recursively opening windows in the interface to identify new windows and add new windows to the map. As discussed above in the rejection for claim 1, opening windows is equivalent to performing actions on the graphical user interface. In addition, the map of Anodide et al. and Goodfellow is hierarchical and includes windows, graphical user interface objects and actions as is discussed above in the rejection for claim 12. And as was shown earlier in the rejection for claim 13, the graphical user interface objects represented in the Anodide et al. and Goodfellow map includes buttons, sliders, check boxes, and tab controls. And as discussed earlier in the rejection for claim14, the actions represented the map of Anodide et al. and Goodfellow include left mouse clicks, right mouse clicks, left mouse double clicks, and keystrokes. Furthermore, Anodide et al. recognizes that a script generator can generate scripts that include instructions to test the application, and that these scripts can be executed by a capture/replay tool.

However, the combination of Anodide et al. and Goodfellow does not specifically disclose that the script generator utilizes the map to generate scripts. On the other hand, Mongan et al. discloses a test generator that iteratively selects paths through a cyclic directed graph in order to create scripts (see column 3, line 19 and column 5, line13). This cyclic directed graph could be equivalent to a map of the graphical user interface; Anodide et al. acknowledges that a cyclic directed graph could represent the interface of an application. Thus, it would have been

obvious to one of ordinary skill in the art, having the teachings of Anodide et al., Goodfellow, and Mongan et al. before him at the time the invention was made, to modify the system taught by Anodide et al. and Goodfellow to include the script generator of Mongan et al., because the script generator of Mongan et al. has a higher degree of automation than that of Anodide et al., making it less expensive.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Blaine Basom whose telephone number is (703) 305-7694. The examiner can normally be reached on Monday through Friday, from 8:30 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Cabeca can be reached on (703) 308-3116. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7238 for regular communications and (703) 746-7240 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 305-3900.

btb
January 9, 2003

JOHN CABECA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100